

ABSTRACT

A multiple-region hardmetal tool piece. The tool piece includes a hardmetal body including a hard particle component and a binder; an additional body, the additional body including a hardmetal body having a hard particle component and a binder; a metal body or a ceramic body; a substantially discontinuous gradient-free boundary layer between the hardmetal body and the additional body; and a mating surface between the hardmetal body and the additional body. In the preferred embodiment, the hard particle components are a carbide, such as tungsten carbide. In the preferred embodiment, the mating surface includes a male portion on one of the bodies and a corresponding female portion on the other of the bodies. The mating surface is symmetrical or asymmetrical and, in the preferred embodiment, the mating surface is axially symmetrical, such as a dimple. The mating surface may further including both micro and macro mating features.

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